

WATER QUALITY COORDINATING COMMITTEE

Lewis & Clark State Office Building
LaCharrette Conference Room
1101 Riverside Drive
Jefferson City, Missouri

July 15, 2014

10:00 a.m.

MEETING AGENDA

Riparian Protection and Restoration: 4 Years of Progress

Presentations from:

Joe Pitts, James River Basin Partnership
Dr. Bob Pavlowsky, Missouri State University
Terry Whaley, Ozark Greenways

Other

Nonpoint Source Management Plan Update
Greg Anderson, DNR, Water Protection Program

Agency Activities

Meetings & Conferences

MISSOURI WATER QUALITY COORDINATING COMMITTEE

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MINUTES

Attendees:

Bob Pavlowsky	Missouri State University	Terry Whaley	Ozark Greenways
Joe Pitts	James River Basin Partnership	John Johnson	DNR, Water Protection Program
Tracy Haag	DNR, St. Louis Regional Office	Greg Anderson	DNR, Water Protection Program
Becky Cripe	DNR, Water Protection Program	Miya Barr	USGS
Stacia Bax	DNR, Water Protection Program	Shane Barks	USGS
Karen Westin	DNR, Water Protection Program	Trish Rielly	DNR, Water Protection Program
Robert Brundage	Newman Comley Ruth PC	Darlene Schaben	DNR, Water Protection Program

Greg Anderson chaired the meeting.

Riparian Protection and Restoration: 4 Years of Progress, Joe Pitts, James River Basin Partnership PowerPoint Presentation

Joe said this project happened because of Section 319 grant funding and thinking outside the box. The project started in 2009 and focused in the James River. The James River Basin Partnership (JRBP) has been working for the last 16 years toward their mission to improve the water quality in the springs, streams, lakes and rivers of the JRB. They envision a future where there is clean water.

The JRB includes parts of eight counties, covers 931,112 acres, 563 springs, 598 gaining streams, 151 losing streams, 3,163+ sinkholes, and includes Springfield, the third largest city in the state. In 2006, with funding from the Natural Resources Conservation Service's South Missouri Water Quality Project, JRBP submitted an application for an "Assessment of Land Suitability for Poultry Litter Application" and as part of this project there were Geographic Information System (GIS) maps completed. The maps were to show the areas with slope greater than 12%, forested lands, and water resource areas with buffers. The 2010 Census data for the James River Basin shows Nixa and Ozark grew in population by approx. 56% and 85%, respectively. The average growth for the entire basin was 15%. Joe said it is difficult to get information out to that many people on what needs to be done to protect the river.

In 2009, the JRBP received a Section 319 grant from the Missouri Dept. of Natural Resources. Joe started working with the JRBP in 2010. The targeted protection area was about 10 miles of riparian corridor. It was difficult for landowners to donate an easement on their property where an appraisal would be returned at a lesser cost than the landowner had originally paid. Typically, the conservation easements are developed with a land trust and the landowner. A negotiation is completed on the valuation of the easement. The land trust will compensate the landowner for the value of the easement. Then once funds have been exchanged, the unwritten rule is that the landowner will donate a portion of the funds back to the land trust to provide stewardship on the perpetual easement. For this project, the JRBP is asking the landowner to donate the easement and in turn JRBP uses the

value of the easement as match and covers the owner's share of fencing cattle, for example, or alternative water supply or planting trees. As a partner, Ozarks Greenways, as a Land Trust, holds the easements for JRBP. The easements are both from private properties and businesses.

The Riparian Corridor Restoration and Protection Project has a grant total of \$1 million--\$600,000 grant funds with \$400,000 match. They currently are overmatched. Some of their projects include the River Bluff Farm in Stone County (5 linear miles); River Cut Golf Course and Kreider Park in Greene County (5 linear miles); and Wilson's Creek above Southwest Wastewater Plant in Greene County (2 linear miles). Pending projects include three private properties. Joe talked about the status of each of these projects.

Joe said a buffer could protect a stream from sediment and phosphorus. Forestland protection is very good for habitat protection and has water quality benefits. City Utilities of Springfield is currently looking at doing some source tracking on their drinking water. Twenty to thirty percent of their drinking water comes from the James River in Webster County. Using this project as an example, Joe said it may be cheaper to spend money on conservation easements in areas of the James River in Webster County than to treat the drinking water. Joe sits on the city of Springfield's Integrated Plan Task Force.

The city submitted the JRBP project to National Association of Clean Water Agencies which ended up being selected to receive the Conservation Award. All partners (city of Springfield, MO Dept. of Conservation, Ozark Greenways, and JRBP) received an award. Some of the challenges Joe faced included the confusion of the word "easement," getting all the right players in the same room, unforeseen future needs of business and private landowners, and being misidentified as a federal agency.

Ozark Greenways – Preserving and Enhancing the Ozark's Natural Heritage, Terry Whaley, Ozark Greenways

Ozark Greenways is a third partner in this project. Terry explained that Ozark Greenways is a nonprofit organization in Springfield and they are in the land trust business because they deal with parks, trails, and greenways. Their mission is to preserve and enhance the Ozark's natural heritage. They were the first organization to work with Natural Resources Conservation Service to utilize federal money in the farmland/ranch protection program to put agricultural easements on a couple of properties in their area. One project was to protect the Wilson's Creek National Civil War Battlefield using ag easements and a historical preservation easement. This will protect the buffer of the battlefield so there would not be strip malls, the smell of barbeque, barking dogs, etc. while people are trying to visit the battlefield. The landowner still owns the land; it's still in their name; they still pay taxes on the land; therefore, they still have some rights. After the project ends, Ozark Greenways will continue to annually monitor the property and hold the property easement.

The steps in the easement process include: identify interested landowner(s); meet with landowner(s) to discuss potential of property donation; landowner signs letter of intent; application is developed for stewardship funds from the Conservation Heritage Foundation; property is appraised; survey of easement boundary is completed; easement documents are executed; BMPs are implemented if needed; and Ozark Greenways provides compliance monitoring and defense of easement from encroachment. Terry felt this helps protect the water quality along these areas and improve it for the future.

In answer to a question, Terry said the staff of Ozark Greenways includes himself and a Program Coordinator to monitor approx. 24 trail easements. He said it usually takes eight months to one year to get a property into an easement.

John Johnson said the second part of this project includes restoration of the corridor. If landowners do not want to donate their land in an easement they can still get a portion of their corridor restored. They would still need to put in a 100-ft. riparian buffer, trees and enter into a 10-year maintenance agreement though. Joe said they haven't had much interest in this part. It involves a cost-share. Joe said they have developed a model ordinance for counties and municipalities to use on setbacks, which is similar to Fayetteville's more aggressive riparian protection ordinance.

Riparian Protection and Restoration: 4 Years of Progress: Load Reduction, Bob Pavlowsky, Ozarks Environmental and Water Resources Institute, Dept. of Geography, Geology, and Planning, Missouri State University (MSU)
PowerPoint Presentation

Bob said their part of the project is to look at the big picture and to help with load reduction assessments. They will get an understanding of the geomorphic and hydrologic conditions of the area, looking at nonpoint source problems, and feeding that into the planning system. At the end, they would assess the load reductions to see what improvements could occur in the easement.

The goal is to maintain natural floodplain function and watershed hydrology. They are trying to preserve the idea of what kind of floodplain services they can provide with a mix of vegetation, allowing conductivity between the stream and local areas. Ultimately a floodplain carries stormwater and floods. So by protecting the area and keeping development out of the area will make flood losses less. Therefore, they could consider a riparian buffer as a management tool and lessen any runoff. Trees can slow erosion and holds banks to reduce channel erosion. Bank erosion can release both suspended sediment and bed-load material to a stream.

There are two parts to the easement issue—surface runoff and resistance to the opposed geomorphic/hydrologic change in the system. They first document stream condition, geomorphic context, watershed factors, and management recommendations. In doing the load reduction analysis, they look at bank erosion rates, management scenario modeling, and nonpoint source load reduction results.

On the James River at River Bluff Farm site, they did a field survey of nonpoint source characteristics of stream channel and banks, erosion pin monitoring of bank erosion rates, historical aerial photos, and load reduction analysis using STEPL.

Missouri has a very good network of stream gages. MSU also has gages located in the James River. Bob showed an example of using long-term bank erosion rates and sediment/Total Phosphorus loads to calculate the total mass eroded and an annual load. He also showed an example of using erosion pin measurements to check bank erosion. Erosion rates follow flood events. It appeared using willow stakes worked well in one area.

Bob explained the results from using STEPL modeling when existing conditions were used to figure the amount of annual loads of phosphorus, nitrogen and sediment. Scenarios of 100 percent woods, meadow, pasture and a mixture of cropland and pasture were used. In looking at long-term benefits, using woods showed very little runoff, while the mixture of cropland and pasture showed greater runoff.

The basic modeling results show that up to 80% of the existing nonpoint load can be reduced if 100% forest occupies the riparian easement; there would be protection from additional nonpoint loadings released by more intense agricultural land use (these could be 3-5 times higher than present); and if results are applied to the entire main stem of the James River, nonpoint loads to Table Rock Lake at Galena could be reduced by 10-25 percent.

The nonpoint source assessment is complete on the Wilson Creek Riparian Easement project but the load reduction analysis is still to come. Anthropogenic waste and flow obstacles should be removed; cattle ramps and trampling is disturbing the banks (should fence out cattle and provide alternative water and shade); current buffer is aging, disturbed, and lacking in places (tree plantings are needed to improve buffer structure and effectiveness); and monitoring is needed to complete the load reduction analysis. For the geomorphic condition assessment, channel conditions were compared between 1953 and 2010.

Bob said they also completed a bank stability assessment on sites where they have erosion pins.

For an effective load reduction approach, this methodology can economically evaluate 319 nonpoint source benefits of riparian easement programs; quantify the effects of both runoff and bank erosion on nonpoint loads from project land areas; evaluate the influence of watershed contributions, channel conditions, and geomorphic history on nonpoint source location/cause and priority for control; and provide an assessment tool and reporting framework that addresses management goals. Bob felt that riparian easements can reduce nonpoint source loads.

Joe mentioned that once the easements are established, he felt they will very effectively protect water quality.

Other

Nonpoint Source Management Plan Update, Greg Anderson, DNR, Water Protection Program

Greg said the comment period for the Nonpoint Source Management Plan has been extended until Aug. 8. The Plan is available on the Department's web site. Also, two public meetings have been scheduled. The first will be held July 22, 7-9 p.m. at the Dewey Short Visitors Center in Branson; the second will be July 28 in Jefferson City in the Lewis and Clark State Office Building. Comments are welcome.

Meeting adjourned.